

Using symbolic meaning as a means to design for happiness: The development of a card set for designers

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Abstract: Using design to improve the lives of people towards a positive flourishing state is the main premise of Positive Design. Our contribution to this growing field focuses on making use of the symbolic meaning that design can have to bolster human happiness. This paper presents the development of a card set for designers aiming to inspire design for happiness. The card set is explored in three sessions with groups of design educators, design students and design professionals respectively to collect diversified recommendations to improve its format and use. The resulting SIM toolkit for designers ('Design with symbolic meaning for user happiness'), composed of a card set and a website, is disclosed and a workshop on how to use it is discussed.

Keywords: symbolic meaning; positive design; happiness; design toolkit

1. Introduction

Happiness is considered a universally desirable human goal. Positive Design, applying knowledge from Positive Psychology, focuses on design that enables positive experiences, in order to contribute to human flourishing (Desmet & Pohlmeier, 2013; Hassenzahl et al., 2013; Sääksjärvi & Hellén, 2013). Positive Design is possibility-driven, going beyond a traditional problem-focused approach. Instead, it focuses on opportunities to improve well-being of individuals and society. Desmet and Pohlmeier (2013) proposed a model that describes three main components of Positive Design: Designing for pleasure, design for virtue, and design for personal significance. The authors sustain that all are fundamental in supporting a design that has a positive impact in people's lives, offering different opportunities of focus. Furthermore, Positive Design should take into account these three components in a balanced way, consider the 'personal fit' of values and desires of users, and



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take into account the commitment of users to make the design successful. Design can have different roles in happiness: it can be a direct source, a symbol, an enabler, or a support for happiness (Pohlmeyer, 2012). Our contribution to Positive Design focuses on understanding and exploring further the value of the symbolic meaning of design for encouraging happiness, and finding ways to operationalize it. Products with symbolic meaning provide the user with additional meaning besides the purely utilitarian: For example, they preserve memories (Belk, 1990; Folkman Curasi et al., 2004), remind of goals and aspirations, display accomplishments, help build and communicate identity (Csikszentmihalyi & Rochberg-Halton, 1981; Belk, 1988; Gentry et al., 1995), etc. Symbolically meaningful possessions have the ability to resist adaptation and remain relevant throughout their lives (Yang & Galak, 2015). As a consequence, these possessions represent an interesting opportunity for design: If designers are able to introduce happiness-related symbolic meaning in design interventions, products or services, then they can positively contribute to a person's subjective well-being.

1.1 Sixteen design directions to support subjective well-being

Previous research provided evidence of the link between products and happiness, and identified six happiness-related symbolic meanings in products (Casais, Mugge & Desmet, 2016), based on Ryff's (1989) determinants of psychological well-being; namely, positive relations with others, personal growth, purpose in life, environmental mastery, autonomy, and self-acceptance. While these six types of happiness-related symbolic meanings can be interesting to analyse existing products, they are too abstract to be applied as a source of inspiration in design processes. As a result, in their research Casais, Mugge, and Desmet (2015) uncovered sixteen design directions (table 1), distributed over the six symbolic meanings. Using a set of product examples selected by four experts in Design for Emotion and Well-Being, that were believed to be related to the six symbolic meanings, sessions with designers and design researchers were conducted to identify relevant design directions. These design directions were aimed at supporting the ideation phase of the design process. Although these sixteen design directions are more concrete, it remains questionable whether they can be helpful for designers. It is anticipated that merely providing the design directions in the form of a list is not the most optimal and inspirational way to communicate and use them. Whether designers successfully use design directions strongly depends on how such information is provided.

Past research on representing and displaying information for designers (Sleeswijk Visser, 2009) reported that providing inspiration is one of the key aspects to trigger designers in their design process. A balanced amount of information should be provided to allow for a quick scan and intuitive selection of the data; also taking into account that designers might appreciate the opportunity to deepen a topic. Furthermore, giving room and freedom to the designer is indicated as crucial, letting designers restructure the information and prioritize it according to their needs and context. Based on these insights, we believe that in order for

designers to successfully use the sixteen design directions, these should be offered in a card set that provides optimal support for the design process.

Table 1 Happiness-related symbolic meanings and respective design directions (Casais et al, 2015).

Symbolic meaning	Design direction	Description
Positive relations with others	Support meaningful affiliations	by facilitating the practice of group/community activities
	Embody characteristics of a group	by using unique characteristics of groups the user belongs to (e.g. culture, profession)
Personal growth	Support active personal development	by providing a platform for active reflection on lessons learned and future expectations
	Embody personal growth	by focusing on adaptability to accommodate physical and psychological change
	Support acceptance and growth from past experiences	by providing a tangible representation of the passage of time
	Enhance memories	by offering a positive context or activity to reflect on memories of loved ones
Purpose in life	Encourage positive change	by providing an external trigger that suggests beneficial activities or behaviours
	Provide a sense of control	by allowing the user to manage personally significant goals, or to eliminate obstacles in their fulfilment
	Keep track of progress	by providing visual feedback on progress towards personally significant goals
Environmental mastery	Support multi-sensorial communication	by translating messages into sensorial experiences (e.g., simulating physical behaviours or emotions)
	Provide a context for meaningful interaction	by making use of the context or limitations as an advantage
Autonomy	Destigmatize	by enhancing the aesthetic qualities of physically enabling products
	Design for mindfulness	by slowing down processes or disclosing the mechanisms behind products to promote a mindful living
	Redirect the user's attention	by designing an intervention that requires attention from the user to distract from negative situations
Self-acceptance	Allow shared transformation	by providing tools for user input at aesthetic and functional level
	Allow self-expression	by providing a tangible platform to wear, share, or display personally significant ideas

This paper presents the development of the SIM toolkit for designers ('Design with symbolic meaning for user happiness'), focusing specifically on the SIM card set. This card set is aimed at communicating clearly each of the six happiness-related symbolic meaning categories and each of the sixteen design directions to designers. With it, we aim to contribute to the dissemination of Positive Design, and to facilitate the development of design interventions that shape people's lives in more positive and meaningful ways. Considering that design education and practice have different concerns (Daalhuizen, 2014), and therefore are likely to have different ways of using the developed card set, we explored it in discussion sessions with design educators, design students, and design professionals respectively, to collect interesting and diverse recommendations to improve it.

2. Development of the card set

Representing and displaying information for designers can be done in different ways. When considering a 'Design with Symbolic Meaning' tool for designers, two possibilities emerged: a digital format (e.g., an application for a smart device, website), and a printed tangible format (e.g., a poster, booklet, card set). The printed tangible format was chosen because it aligned with our view of the demands of design practice: In terms of navigation, the printed format allows for free interpretation on possible use and navigation which gives the designer freedom. Furthermore, a printed format allows an easy overview of the information, as well as the flexibility for evaluation, comparison, and pairing of different elements of the displayed information. More specifically, a card set was selected as the format for the tool. Some additional advantages of using a card set are pointed out based on prior research (e.g., Lucero & Arrasvuori, 2010; Bekker & Antle, 2011; Friedman & Hendry, 2012; Yoon, Desmet & Pohlmeier, 2013). Namely, the same card set can be used in both design practice and research, as well as for communication and inspiration, both individually and in group settings. Furthermore, a card set can be a way to present different components of the same topic, such as eliciting conditions, personal anecdotes, physical or behavioural manifestations, analogous themes, application examples, etc.; allowing it to be used to understand a complex topic in a varied way. Some limitations of this format, however, can also be observed. For instance, a card set is a static format, which may suffer from lack of updateability and lack of dynamic interaction. Furthermore, an open use with none or few rules can be overwhelming or confusing, which may result in it being time consuming to figure out and put in practice. In addition, the card set format can oversimplify important information. Through an iterative process, several versions of the card set were developed and tested, keeping in mind the limitations of the format.

2.1 Criteria for the card set

The initial card set ('Design for Happiness with Symbolic Meaning') was designed by the main researcher and discussed with the research team (Figure 1). It was composed of sixteen design direction cards, each containing an explanation of the respective symbolic meaning. Product examples were used to illustrate each design direction, which had been

previously selected. The selection of product examples took place in a group session with four experts in Design for Emotion and Well-being, aiming to pick out products that were in some way open for symbolic meaning attribution, referring to the work of Casais et al. (2016). Following the discussions with the research team, the card set was tested in a small study with six design students, which resulted in some initial recommendations. From there, the main researcher redesigned the card set with input from the research team. The various iterations were made to design a more effective card set.

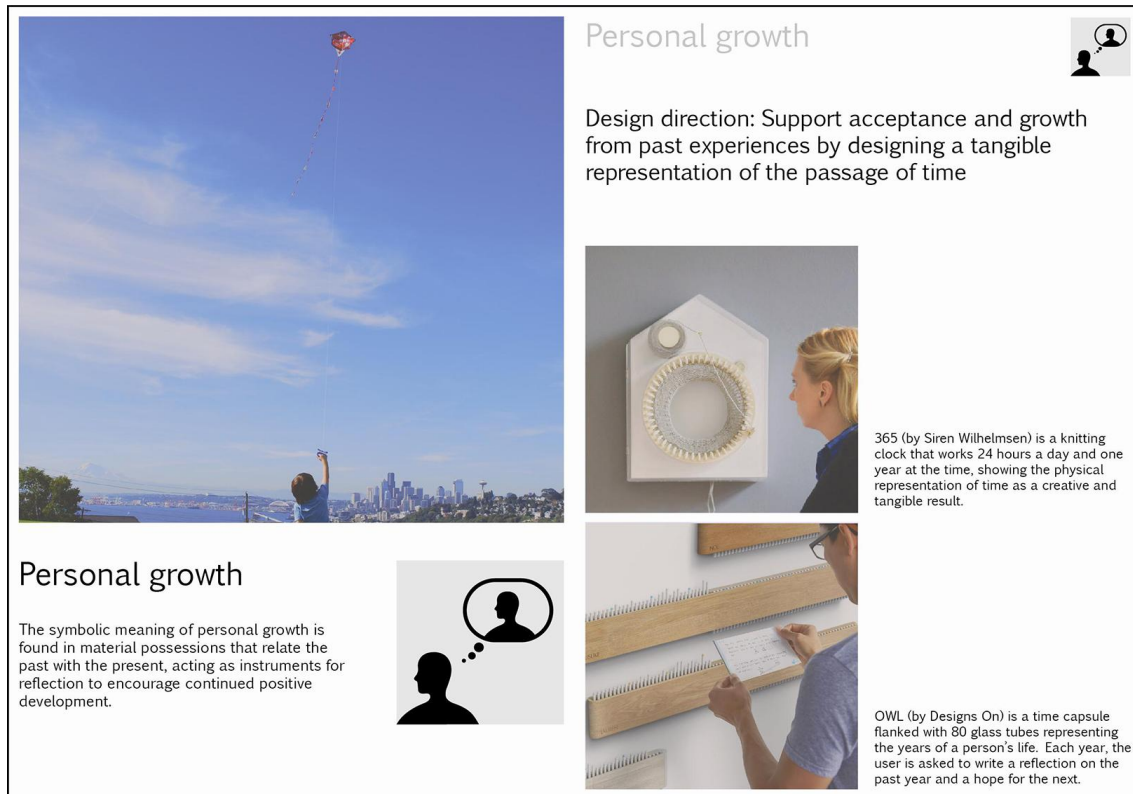


Figure 1 Initially, the card set was composed of sixteen cards. Each one-sided card (displayed here in real size of 10,5x15 cm) described a symbolic meaning illustrated by an inspirational image, and contained a related design direction illustrated by two product examples.

During the iterative process some considerations were added to the requirements of the card set. Specifically, the developed card set should allow the designer(s) to manage and structure the information. Furthermore, the organization of the information provided to the designer(s) should be facilitated by the use of icons or colours to cluster elements from the same group. A clarification of clusters should be provided in a manual. Furthermore, images of context, interactions or designs can help with random idea generation. In addition, it is important to have an introduction to the use of the card set for designers, suggesting ways to use it. Based on the mentioned recommendations, the card set was optimized (Figure 2 and 3).

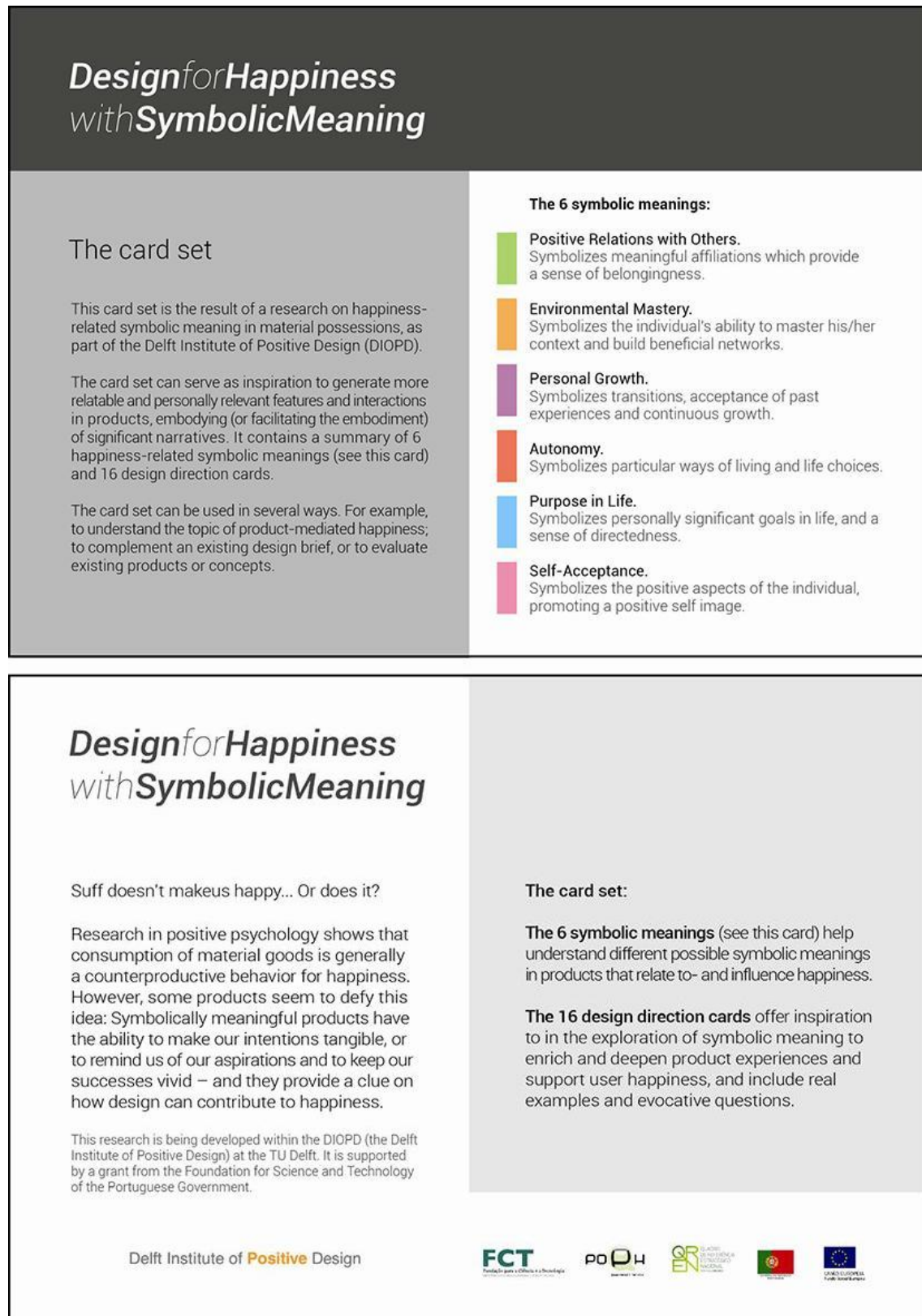



Figure 2 The introduction card added to the improved version (displayed here in real size of 10,5 x 15 cm). It contained a description of the card set and of the six symbolic meanings.

Support acceptance and growth from past experiences.

Designing a tangible representation of the passage of time



(Personal growth)

Think about...

- ...what scale of time is relevant for your target?
- ...what tangible form can be relevant to express personal growth in time?

Personal growth.

Symbolizes transitions, acceptance of past experiences and continuous growth

The 365 Knitting Clock by Siren Wilhelmsen works for one year producing a wearable "past" scarf that can be carried out in the future.

Figure 3 Example of a design direction card (displayed here in real size of 10,5 x 15 cm). Each design direction card included a product example, and two or three eliciting questions.

For the improved version, an introductory card summarizing the research that informs the card set and describing the six symbolic meanings was added. Furthermore, one distinctive product example was used for each design direction. Eliciting questions aimed to encourage users to further reflect on the design direction were also added. In this improved version of the card set, the design direction cards were colour coded according to the six symbolic meanings, in order to facilitate an easy structuring of the information.

3. Exploring the card set in design education and practice

Following the development of the card set, an exploration of its use, format and content was conducted taking into account the different perspectives from design education and practice. Exploring the card set among different design-related perspectives enabled us to gain insight into varied possibilities of use and ways to arrange the content, in order to optimize it. In this section, we report the recommendations provided by three group sessions with design educators, design students, and designers. The sessions aimed to understand how different possible users of the card set could potentially apply it, and what challenges and limitations can be identified in the use of the card set.

3.1 Method

This research aimed to gather rich and informed opinions on the card set, its use, and additional ways to improve it, and thus was designed as a qualitative research. Specifically, we conducted three group sessions with expert informants in order to obtain detailed insights to further improve the tool. Specifically, nine participants were recruited to take part in the group sessions (Table 2). Three groups were formed, each group participating in a separate group session, based on the three different design perspectives: In the session of group 1, two design educators participated, both with extensive experience in teaching at a faculty of Industrial Design Engineering, from two different departments. In the session of group 2, four final year Master students participated, from two different Master programs in the field of design. In the session with group 3, three design professionals participated, coming from different design practices. Specifically, participants from group 3 originated from a small start-up company, a medium-sized engineering company, and from a user research practice, respectively. In the sessions, participants were presented with the card set and asked to explore it; discussing legibility, applicability, and relevance of the design directions in multiple scenarios. In addition to the card set, participants were given an A4 sheet with a list of the design directions, and an A3 sheet with all the cards, for a quick overview. Each session took about one hour, and was recorded with an audio device.

The participants were introduced to the card set and made aware of the importance of their specific role (as design educators, design students, and design professionals) to be able to comment based on this specific point of view, skill set, and experience. Next, participants were asked to observe, handle, and read the cards. A group interview followed: Firstly, participants were asked to predict possible uses for the card set, based on the questions: *How do you envision applying the card set? In what type of projects, stages, and scenarios*

would you use it? What would be reasons to use it or not use it? For this set of questions, participants were asked to consider the specific nature of their work—different types of design practices, teaching in different design disciplines, following different design programmes. Secondly, participants were asked to focus on content, based on the questions: *Do you understand the card set? What is not clear? Is the card set inspiring (why/why not)?* Thirdly, participants were asked about the format of the card set, based on the question: *What do you think of the card set format?* Lastly, participants were asked about general improvements, with the question: *What is missing? How can it be improved?*

Table 2 The profile of the participants that were recruited for the group sessions.

Participants	Role	Experience	Expertise
Design educator 1 (DE1)	Associate Professor of Consumer Behaviour	10 years	Strategic product design research methodology, consumer behaviour, statistical analysis
Design educator 2 (DE2)	Assistant Professor of Industrial Design	13 years	Exploring interactions, design thinking and doing tools, meaning in everyday system use, health (ageing), mobility and ICT in urban environments
Design student 1 (DS1)	Master of Strategic Product Design	2nd year student	Involving users in development of smart grid systems
Design student 2 (DS2)	Master of Design for Interaction	2nd year student	Energy saving and domestic comfort
Design student 3 (DS3)	Master of Design for Interaction	2nd year student	Engaging children with Cystic Fibrosis to exercise
Design student 4 (DS4)	Master of Science Communication in collaboration with Master of Design for Interaction	2nd year student	Dialogue on opportunities and impact of new technologies
Design professional 1 (DP1)	Industrial designer	6 years	Industrial design, IoT, embedded systems, UX and business development (small company)
Design professional 2 (DP2)	Senior design engineer	7 years	Consumer goods for outdoor (previous position in large company); small scale sustainable energy products and auxiliaries (small company)
Design professional 3 (DP3)	Senior user researcher in customer experience	6 years	Market research; customer experience (medium sized company)

3.1 Results

The audio recordings of each group session were analysed and coded. This section reports the main opportunities, challenges and suggestions identified in the discussion of the card set for designers.

Imagining opportunities: a design tool for information, communication, and evaluation

The first point of discussion during the sessions was focused on understanding how different potential users of the card set envision applying it. In all groups, opportunities were identified. In general, designing with happiness-related symbolic meaning was considered a valuable approach, adding a layer of interest projects that involve people. Even in function- or problem-driven projects, the human component can be supported with this approach: *“I do think as a designer you are obliged to integrate as much of these aspects as possible. There are some basic needs that the product needs to provide, and then complementary to that, it can benefit the emotion, the feeling of happiness”* (DP2 = Design Professional 2, see table 2). Overall, the card set was described as having potential to aid the communication with different stakeholders, and in generating a common design vision: *“This can help to brainstorm as a team, to know that you are talking about the same thing. It’s creating a common language amongst a team that has very different ideas”* (DS2); *“This might also help when discussing with a client, to get a better hold on what they want to achieve with the project”* (DP1). Focusing on more specific opportunities identified in the sessions, the design teachers stated that the card set represents a potential source of inspiration and a reference of scope for students: *“Many of these can really help students to think in terms of what they want their products to achieve”* (DE1). In that way, the card set can exemplify how far they need to go in their designs, helping students to define design goals and interaction qualities: *“These could all be typical goals that students could have”* (DE2). For the design students in particular, the main opportunities the card set presented were related to the categorization and validation of design concepts: *“In the end it can be used to categorize and validate an idea”* (DS1). Furthermore, the card set was considered a convenient way to understand a complex and potentially overwhelming topic: *“If you are not really familiar with the topic and you dive into the literature it’s like... and if you have a card set, it summarizes the most important things, so it’s going to help”* (DS3).

Anticipating limitations: complex language, a link to happiness, and the need for diversity

The second point of discussion in the sessions concerned the challenges and difficulties of using the card set. The challenges that were identified generally overlapped in the three discussion sessions. In particular, the language was considered complex and resorting to jargon that could be simplified. Especially when using the card set with different stakeholders, it is important to consider the use of an uncomplicated language that communicates clearly the topic and method: *“With consumers it would be difficult to use because they could have a hard time understanding”* (DP3). Another challenge that was identified concerned the reduced emphasis on happiness. While the focus on happiness-related symbolic meaning is considered a valuable approach, the link to happiness was mentioned as needing to be made more evident: *“I know these are all strategies for reaching happiness, but shouldn’t happiness also be here?”* (DS1). In addition, a limitation was identified concerning the use of only product examples in the cards, which leaves out other potentially inspiring and informative examples like brands, services, etc.: *“I find a limitation*

in the examples because they are all objects. I would like to have less obvious examples, like interactions” (DE2). Both the design teachers and the design students pointed out that a lack of instructions could potentially hinder the use of the card set, due to inexperience in using design tools: *“I would use them as in inspiration source, but I have no clue how to continue”* (DS3). This was also mentioned in the session with the design professionals: *“It needs structure to use with someone who is not a designer, so that it doesn’t go off track”* (DP1). Another mentioned challenge referred to the categorization by symbolic meaning, communicated by the use of colour clusters. The pre-determined categorization by colour was regarded as expendable given that multiple design directions can be grouped in other diverse and context appropriate ways, without compromising the essence of the card set.

Proposing improvements: illustrative examples, hierarchy, and flexibility

The last discussion point concerned additional suggestions to the card set that were made based on the acknowledged opportunities and challenges. Firstly, participants suggested the use of more varied examples to convey the rich possibilities of how design can intervene in real-life contexts. This could include specific interactions, for example, *“redesigning a hand-shake”* (DE2), intangible digital products, etc. Relating to this idea, the participants suggested the use of a digital database in addition to the cards, to add variety of examples and information: *“If you want to add something, some extra information or look for other examples, a website would be perfect for that, or an app”* (DS2). This would allow the designers to go deeper into selected themes, not only with more and diversified examples, but also with access to literature. In addition, it could potentially be open for contributions, thus preventing it from becoming obsolete: *“I think it’s okay to tell the students ‘you get access to all this but we expect you to contribute with three products’”* (DE1). Another suggestion that was given especially by the design teachers and design students regarded a clear logic on how to prioritize and choose the cards to use, giving (more) emphasis on an introduction card or manual. An introductory element could also help contextualize the card set in a larger research agenda, point out directions for its use and navigation, and provide structure. In all groups, the suggestion to separate the different elements of the card set was made, to provide more flexibility in the use of the card set. Namely, the participants suggested the separation of the design directions, the design examples, and the eliciting questions, to allow the card set to be used in different stages of the design process and for different purposes: *“The symbolic meaning combined with the design directions is really positioning—it’s a big influence. Maybe it should be a more open format that you can combine. If you presented like this, it feels like this is the right answer and that is the wrong answer”* (DP1).

4. The SIM toolkit

Design education and design practice have different concerns, which resulted in different recommendations. In order to build a card set that is comprehensive and holistic, but still effective in providing inspiration, a careful selection of the recommendations was made. In order to select the most fitting recommendations to implement, we considered the

proposals from the three sessions that could assist the quality of the resulting card set, without making it overwhelming. Keeping that in mind, the selected recommendations were as follows: 1) Include an introduction to the topic of happiness in a separate card. This aims to convey more clearly the link to happiness and the potential impact of the design directions; 2) simplify the language used in the card set, especially in the design directions and their respective evocative questions. This aims to improve the clarity of the card set without compromising the essence of the text; 3) separate the different elements of the card set; namely, the design directions, the symbolic meanings and the design examples. By doing this, we can improve the card set's flexibility and allow it to be used in diverse circumstances without compromising its core objective; 4) rethink the colour clustering of the design directions based on symbolic meanings. The symbolic meaning cards can be used to propose certain design directions, while allowing freedom to cluster the design directions based on other themes, like the user's environment and needs; 5) include suggestions of use and navigation. Especially for the novice designer or design student, this addition can facilitate the generation of ideas in a more directed way; and 6) add a digital companion to the printed card set, in the form of a database of examples and theory. This complementary source allows the designer to dive deeper into each theme, and be inspired by diverse examples.

Following the introduction of the recommendations, a more comprehensive and flexible card set resulted (Figure 4).

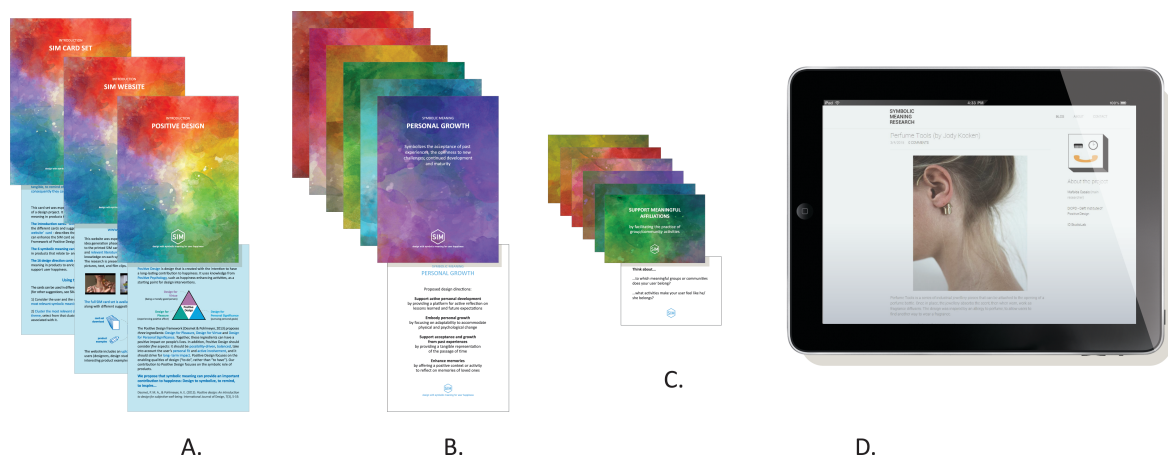


Figure 4 Overview of the resulting SIM card set: (A) the three introduction cards, (B) six symbolic meaning cards and (C) sixteen design direction cards, and (D) the SIM website.

Namely, the optimized SIM card set ('Designing with symbolic meaning for user happiness') is composed of:

- A. Three introductions cards; focusing on the research of which the card set is part of, explaining the contents of the website companion, and describing the contents of the card set;

- B. Six symbolic meaning cards with a description of each symbolic meaning on the front side, and a list of relevant design directions on the back side;
- C. Sixteen design direction cards with the design direction on the front side, and a few eliciting questions about the user on the back side;
- D. A website containing diverse design examples and relevant literature.

4.1 Introduction cards

The three introduction cards provide an entry point to the SIM toolkit (Figure 5). The first introduction card entitled 'Positive Design' provides a summary of the Positive Design framework (Desmet & Pohlmeier, 2013) and links it to the research on design with symbolic meaning. The second introduction card entitled 'The SIM card set' provides a small introduction about the research and summarizes the content of the card set, suggesting ways to use it. Specifically, it indicates that the card set is meant for the idea generation phase of design projects and suggests two ways of selecting design directions: by 1) selecting the most relevant symbolic meaning and considering the suggested directions, and 2) by clustering the most relevant design directions according to the designer's own theme, selecting from that cluster, and discovering the symbolic meaning associated with it. The third introduction card, named 'The SIM website', describes the features of the companion platform that extends and illustrates the card set.



Figure 5 Overview of the introduction cards of the SIM card set (the original size is 10,5 x 7,5 cm).

4.2 Symbolic meaning cards

In addition to the three introductory cards, the optimized version of the card set includes six symbolic meaning cards. Each symbolic meaning is communicated with a distinct colour. Namely: 'Purpose in life' is blue, 'personal growth' is purple, 'self-acceptance' is pink, 'autonomy' is red, 'environmental mastery' is yellow, and 'positive relations with others' is green. The cards contain a description of each symbolic meaning on the front side, and a list of suggested design directions on the back side (Figure 6).

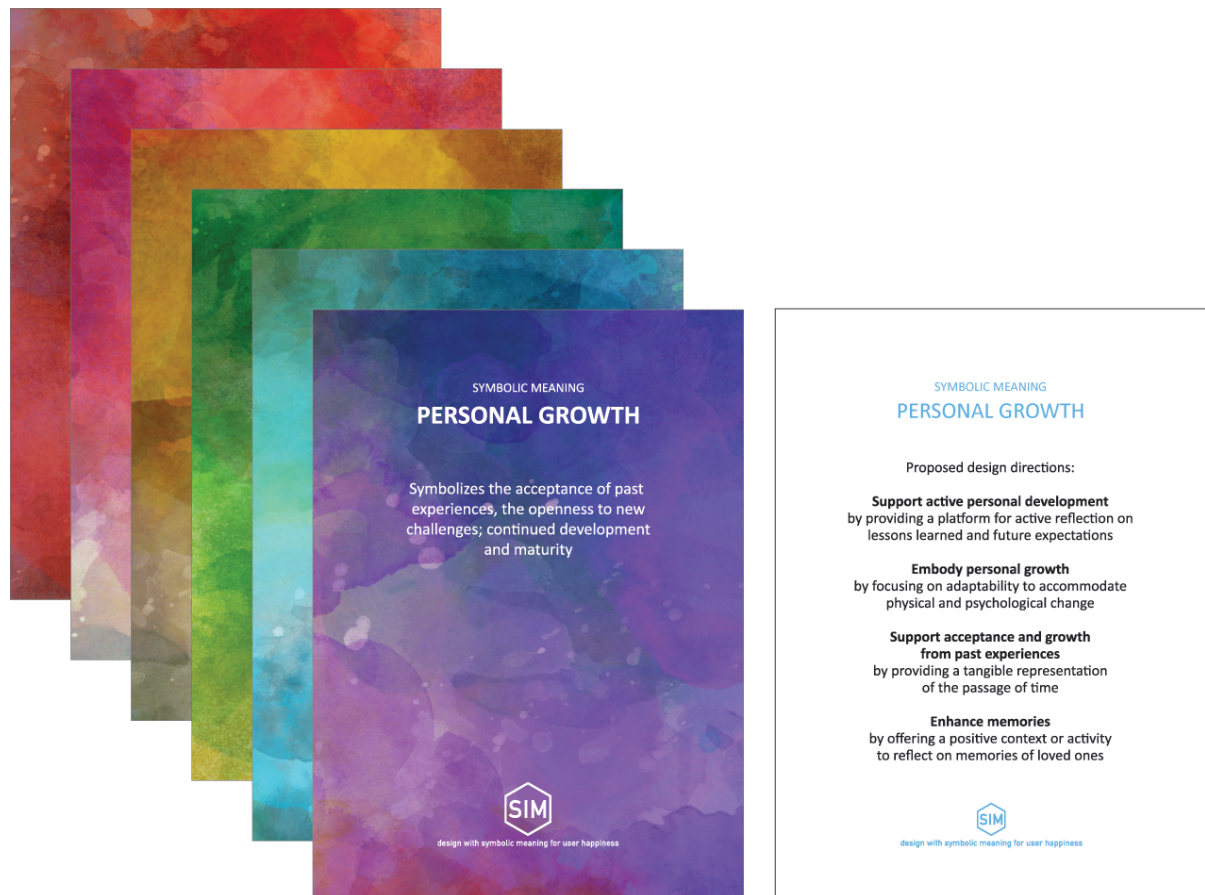


Figure 6 The symbolic meaning cards of the 'Design with Symbolic Meaning' card set (the original size is 10,5 x 7,5 cm).

4.3 Design direction cards

The design direction cards describe a design direction on the front side and contain questions about the user on the back side, to allow the design to go deeper into the topic. Although the design direction cards are not strictly grouped according to the respective symbolic meanings, we opted to use the corresponding colour in a predominant way to provide some degree of structure (Figure 7).



Figure 7 Example of design direction cards (the original size is 7,5 x 5,3 cm).

4.4 Digital database (SIM website)

The digital database (the SIM website) contains diverse design examples and relevant literature (<http://www.designwithmeaning.org>). It is linked to the printed cards by image recognition technology, specifically, QR codes. To address the limitations of the printed card set (see section 2 of this paper), the website provides a solution for issues of updateability and dynamic interaction, as well as the potential oversimplification of information. Specifically, the website was designed with an upload feature, through which users can contribute with new product examples, literature, or other interesting sources. The SIM website is managed by the main researcher with support from the research team, to ensure that it is up to date and relevant. Furthermore, the website serves as a dissemination platform for the research, allowing users to download the card set, which is provided as open source. A link to the SIM website will be provided in affiliated websites, such as the Delft Institute of Positive Design (<http://www.diopd.org>). Furthermore, a bookmarklet was also created which contains the SIM website link and a QR code that directs to the SIM website, to disseminate the SIM toolkit on research and design events.

5. Conclusions and future research

The main goal of this research was to produce a tangible design tool that can assist and inspire the development of design for happiness interventions. Through an iterative process several adjustments were made in order to come up with an inspirational resource for designers, in the form of a card set and a website (a toolkit). The exploration of the card set within different perspectives of design helped identify opportunities and challenges, enriching the resulting SIM card set and making it more complete and flexible. The limitations we found in the discussion of the card set are related to the depth with which participants explored the contents of the tool. On the one hand, participants did not apply the card set in their context, which might have brought up additional opportunities or concerns. On the other hand, the envisioning exercise might have reduced some constraints imposed by the participants' context, thereby allowing more ideas to emerge. Furthermore,

certain limitations in the research set up can be observed. Namely, all education informants were from the same faculty. Although we aimed at bringing together different departments and expertise, more variety in this group could bring other perspectives and distinct ways of teaching or studying design. Furthermore, the small size of the groups may also be considered a limitation. We decided to use a qualitative approach because this enabled us to provide in-depth insights with experienced informants, which allowed us to further improve the tool. Finally, the lack of a more specific strategy to ensure that the SIM toolkit remains relevant and enticing to use can be seen as a limitation. An addition to the current dissemination strategy could involve for example, the integration of the SIM toolkit in Design education to prepare future designers.

The applications we foresee for the SIM toolkit (the SIM card set and the SIM website) are diverse. We believe that the SIM toolkit is potentially relevant for a diverse array of design projects, from consumer durables to services, connected products, etc. It can improve the quality of human-product interactions at different scales and provide a human element of personal significance in problem-driven projects. For example, it can be valuable to implement the card set in problem-driven projects that target especially vulnerable users, such as people requiring healthcare assistance, imprisoned, elderly, BoP, etc.

Following the development and optimization of the SIM toolkit, we now aim to investigate the effects of using the card set and the website in varied projects. This is expected to occur in the form of a workshop with designers, and we anticipate that the resulting designs will provide a clearer illustration of the potential of the developed toolkit. An additional research direction that we are interested in is understanding the effects such products might have on consumers.

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5. References

- Bekker, T. & Antle, A. N. (2011) Developmentally situated design (DSD): Making theoretical knowledge accessible to designers of children's technology, *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI '11)*, New York: ACM, pp 2531–2540.
- Belk, R. W. (1988) Possessions and the extended self, *Journal of Consumer Research*, 15(2), pp 139–168.
- Belk, R. W. (1990) The role of possessions in constructing and maintaining a sense of past, in Goldberg, M. E., Gorn, G. and Pollay, R. W. (eds.), *Advances in Consumer Research*, 17, Provo, UT : Association for Consumer Research, pp 669–676.
- Casais, M., Mugge, R. & Desmet, P. M. A. (2015) Extending product life by introducing symbolic meaning: An exploration of design strategies to support subjective well-being, in Cooper, T.,

- Braithwaite, N., Moreno, M. and Salvia G. (eds.), *Product Lifetimes And The Environment (PLATE) Conference Proceedings*, Nottingham Trent University: CADBE, pp 44–51.
- Casais, M., Mugge, R. & Desmet, P. M. A. (2016) *Stuff doesn't make us happy. Or does it? The role of symbolic meanings of objects in subjective well-being*. Working paper, Delft University of Technology.
- Csikszentmihalyi, M. & Rochberg-Halton, E. (1981) *The meaning of things: Domestic symbols and the self*, Cambridge University Press: Cambridge.
- Daalhuizen, J. (2014) *Method usage in design: How methods function as mental tools for designers*, Doctoral dissertation, Delft University of Technology, Delft: The Netherlands.
- Desmet, P. M. A. & Pohlmeier, A. E. (2013) Positive design: An introduction to design for subjective well-being, *International Journal of Design*, 7(3), pp 5–19.
- Folkman Curasi, C., Price, L. L. & Arnould, E. J. (2004) How individuals' cherished possessions become families' inalienable wealth, *Journal of Consumer Research*, 31(3), pp 609–622.
- Friedman, B. & Hendry, D. G. (2012) The Envisioning cards: A toolkit for catalyzing humanistic and technical imaginations, *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI '12)*, New York: ACM, pp 1145–1148.
- Gentry, J., Menzel Baker, S. & Kraft, F. B. (1995) The role of possessions in creating, maintaining, and preserving one's identity: Variation over the life course, in Kardes, F. R. and Suhan, M. (eds.), *Advances in Consumer Research*, 22, Provo, UT : Association for Consumer Research, pp 413–418.
- Hassenzahl, M., Eckoldt, K., Diefenbach, S., Laschke, M., Lenz, E., & Kim, J. (2013) Designing moments of meaning and pleasure. Experience design and happiness, *International Journal of Design*, 7(3), pp 21–31.
- Lucero, A. & Arrasvuori, J. (2010) PLEX Cards: A source of inspiration when designing for playfulness, *3rd International Conference on Fun and Games (Fun and Games '10)*, New York, pp 28–37.
- Pohlmeier, A.E. (2012) Design for Happiness. *Interfaces*, 92, pp 8–11.
- Ryff, C. D. (1989) Beyond Ponce de Leon: New directions in quest of successful ageing, *International Journal of Behavioral Development*, 12(1), pp 35–55.
- Sääksjärvi, M., & Hellén, K. (2013) How designers and marketers can work together to support consumers' happiness. *International Journal of Design*, 7(3), pp 33–44.
- Sleeswijk Visser, F. (2009) *Bringing the everyday life of people into design*, Doctoral dissertation, Delft University of Technology, Delft: The Netherlands.
- Yang, Y. & Galak, J. (2015) Sentimental value and its influence on hedonic adaptation, *Journal of Personality and Social Psychology*, 109(5), pp 767–790.
- Yoon, J., Desmet, P.M.A., & Pohlmeier, A.E. (2013) Embodied typology of positive emotions: The development of a tool to facilitate emotional granularity in design. *5th International Congress of International Association of Societies of Design Research*, Tokyo: Japan, pp 1195–1206.

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